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Appraisal | Critically Appraised Papers

A supervised exercise program may not add any benefit over advice for patients recovering from ankle fracture

Synopsis

Summary of: Moseley AM, Beckenkamp PR, Haas M, Herbert RD, Lin CWC (EXACT team). Rehabilitation after immobilization for ankle fracture. The EXACT randomized clinical trial. *JAMA.* 2015;314(13):1376-1385. doi:10.1001/jama.2015.12180.

Questions: For patients with an isolated ankle fracture, does a supervised exercise program and advice (rehabilitation) lead to greater improvements in activity limitation than advice alone? Is any improvement different with respect to fracture severity, age and gender? ***Design***: A multicentre, randomised, controlled trial with concealed allocation. ***Setting***: Seven Australian hospitals. ***Participants***: The inclusion criteria were: isolated ankle fracture treated with immobilisation (with or without surgical fixation); immobilisation removed on the day of recruitment; approval received from the orthopaedic surgeon to bear weight as tolerated or bear partial weight; reduced ankle dorsiflexion range of motion (at least 30 mm less motion compared with the non-fractured leg, using the weight-bearing lunge method); ankle pain at least 2 out of 10 when 50% of body weight was borne through the affected leg; completed skeletal growth; and no concurrent pathologies that would affect the ability to perform everyday tasks. Randomisation allocated 106 to a supervised exercise program and advice (rehabilitation) and 108 to advice alone. ***Interventions***: The advice group had a single session of self-management advice about exercise and return to activity. The session was provided by a physiotherapist in the fracture clinic and also included advice on exercises for ankle movement in non-weight-bearing positions and a handout summarising the advice with text and illustrations. The rehabilitation intervention consisted of the same advice in the fracture clinic, in addition to a supervised exercise program of five sessions over 4 weeks, which was individually tailored, prescribed, monitored, and progressed by a physiotherapist in the hospital outpatient service. ***Outcome measures***: Primary outcomes were the Lower Extremity Functional Scale (range 0 to 80, higher scores indicate better activity) and quality of life, measured by the Assessment of Quality of Life instrument (range, 0 to 1, higher scores indicate better quality of life), which were assessed by a blinded assessor at 1, 3 and 6 months after randomisation, with the primary time point at 3 months. ***Results***: A total of 173 patients (80%) completed the 3-month follow-up, and 170 (79%) completed the 6-month follow-up. The mean difference in activity limitation was 0.4 units (95% CI −3.3 to 4.1) at 3 months and 0.2 units (95% CI −3.4 to 3.9) at 6 months, with no difference between the two groups. Mean difference in quality of life was −0.01 units (−0.06 to 0.04) at both 3 and 6 months. Treatment effects were not moderated by fracture severity or age and gender. ***Conclusion***: A supervised exercise program did not confer additional benefits in activity limitation or quality of life compared with advice alone for patients with isolated and uncomplicated ankle fracture.

Provenance: Invited. Not peer reviewed.

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Commentary

As the benefits of rehabilitation after immobilisation for ankle fracture are unclear, Moseley and colleagues conducted a pragmatic, randomised clinical trial to determine the effectiveness of a supervised exercise program and advice compared with advice alone. This well-designed trial provides robust evidence that a supervised exercise program provides no additional improvement in activity limitation or quality of life compared with advice alone, which is in line with findings from other studies evaluating rehabilitation after the removal of immobilisation.[1] Nevertheless, in the present study, nearly one-third of the participants in the advice group received out-of-trial physiotherapy, which could potentially have diluted the observed effect. The authors hypothesised that older women or people with a more severe fracture may benefit more from rehabilitation, but no treatment effects were associated with fracture severity or age and gender. This is in contrast with a previous study showing that younger patients (< 40 years) could benefit from a postoperative training program.[2]

Although recovery from ankle fracture is initially rapid, the recovery slows with time and can be incomplete 2 years after fracture.[3] A prolonged physiotherapy intervention or a delayed initiation could be trialed, as five additional sessions during the first 4 weeks after immobilisation may be insufficient. Both groups in the present study reported improvements in activity limitations and quality of life during the follow-up time, although no between-group differences were found. The lack of a control group receiving no treatment or advice cannot rule out time as a factor and might explain the improvement seen in both groups; however, this would have included ethical considerations. Importantly, results from this study indicate that routine care for patients after isolated and uncomplicated ankle fracture should include self-management advice at the time of removal of immobilisation but not a supervised exercise program.

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